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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/572,752	03/21/2006	Syuuji Nakamura	27304U	3327
20529 7590 12/24/2009 THE NATH LAW GROUP 112 South West Street Alexandria, VA 22314				
EXAMINER HU, JENNIFER F				
ART UNIT 2821		PAPER NUMBER		
MAIL DATE 12/24/2009		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/572,752

Applicant(s)

NAKAMURA ET AL.

Examiner

JENNIFER F. HU

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 March 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Amendment D received on August 13, 2009 has been entered into the record in accordance with the Request for Continued Examination submitted on September 11, 2009.
2. Claims 1-10 are pending.

Response to Arguments

3. Applicant's arguments filed August 13, 2009 have been fully considered but they are not persuasive. Applicant amended claims 1 and 6 to recite the limitation of a mechanically soft magnetic material having plasticity and flexibility. Applicant argues that Maruyama does not teach a magnetic material having plasticity and flexibility. Examiner respectfully disagrees. Fig. 7 of Maruyama clearly shows that magnetic ribbons 41 and 42 yielding in response to pressure or stress, rather than breaking under stress, indicating that the magnetic layers have flexibility. Furthermore, Maruyama teaches the magnetic ribbons may advantageously be made of an amorphous metal because of the materials elasticity [0060]. "Plasticity" may also be interpreted as having the ability to be shaped or formed. Given that the magnetic material of Maruyama is formed into magnetic ribbons in a mold, the magnetic material does indeed have plasticity.
4. Applicant further argues that Maruyama discloses the amorphous metal may be iron or cobalt, which are known to be hard materials. On the contrary, Maruyama discloses the amorphous metal may be of an iron or cobalt *system*. Amorphous metals are alloys, not a pure metal. Therefore, the reference describing cobalt as a hard metal is irrelevant

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because the properties of an alloy containing a metal will differ significantly from the pure metal.

5. Applicant also cites a wikipedia reference defining amorphous metals as resisting plastic deformation and known to fail suddenly when loaded in tension. Although wikipedia is not generally accepted as a valid reference because the original source of the information is not verifiable, Examiner does note that the same reference also describes amorphous alloys being able to “sustain larger reversible (“elastic”) deformations than crystalline alloys” (page 3, third paragraph).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maruyama (US 2003/0184489) in view of Mejia (US 6,400,338).

8. As to claim 1, Maruyama teaches an embedded door handle antenna comprising a door handle (“door handle,” [0004]),
an antenna embedded in the door handle (“antenna ... inside of a door or a door handle,” [0004]), the embedded antenna having a core (“core portion,” [0009]) around which an insulation covered conductor is wound (“insulated coating conductive coil,” [0030]), wherein

the magnetic core contains a flexible magnetic body ("plurality of magnetic ribbons," [0009]) made of soft magnetic material ("amorphous material," [0013], "soft magnetic characteristic," [0035]).

Maruyama does not teach the magnetic core and a wiring layer which are laminated on each other. Mejia teaches an embedded antenna having a core (12, Fig. 9A) around which an insulation covered conductor (22, Fig. 9A) is wound, wherein the core comprises a magnetic core ("ferrite," col. 5, line 24) and a wiring layer ("metallization layers," col. 5, lines 7-9, 26, Fig. 9A) which are laminated to each other.

It would have been obvious to one of ordinary skill in the art to modify the antenna module of Maruyama by providing a wiring layer directly on the magnetic core body as taught by Mejia so that an additional separate printed circuit board is not necessary, thus simplifying assembly and miniaturizing the antenna module.

As to claim 6, Maruyama teaches an embedded door handle antenna, comprising:
a door handle having a hollow portion therein ("door handle," [0004]);
an antenna embedded within the hollow portion of the door handle ("antenna... inside of a door or a door handle," [0004]),

the embedded antenna comprising a flexible magnetic core ("core portion," [0009]) containing a flexible magnetic body ("plurality of magnetic ribbons," [0009]) made of soft magnetic material ("amorphous metal," [0013], "soft magnetic characteristic," [0035]), around which an insulation covered conductor is wound ("insulated coating conductive coil," [0030]); and

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a connector attached to one end of the embedded antenna ("terminal electrodes," [0030]), the connector facilitating connection of the embedded antenna to a power circuit ("condenser," i.e. a capacitor which can store energy, [0030]), wherein

the embedded antenna is energized by an action of at least one of request switch ("when it receives an ID code from the electric key, the system unlocks," [0003]) and a proximity of a keyless entry component ("when a person with an electric key approaches to the opening and closing portion, the system becomes a reception standby mode," [0003]).

Maruyama does not teach the flexible magnetic body laminated to a wiring layer. Mejia teaches a wiring layer ("metallization layers," 26, Fig. 9A) laminated to the magnetic core (12, Fig. 9A) of an antenna. It would have been obvious to one of ordinary skill in the art to modify the antenna module of Maruyama by providing a wiring layer directly on the magnetic core body as taught by Mejia so that an additional separate printed circuit board is not necessary, thus simplifying assembly and miniaturizing the antenna module.

As to claims 2 and 7, Mejia teaches the wiring layer is a printed circuit board (a printed circuit board is understood as a mechanical support for electronic components that provides conductive paths to electrically connect the components).

As to claims 3 and 8, Mejia teaches the core is provided with an extending portion (18, Fig. 9A) which outwardly extends from a coiled section (16, Fig. 9A) around which the insulation covered conductor is wound, and an electronic component (14, 28, Fig. 9A) is mounted on the extending portion.

As to claim 4 and 10, Mejia teaches an electricity control section ("integrated circuits," col. 6, lines 1-21, 14, Fig. 9A) which permits and prohibits energizing the wiring layer depending upon an operation state of the embedded antenna.

As to claims 5 and 9, Mejia in view of Maruyama teach the embedded antenna substantially as claimed as applied to claim 3 above, but fails to teach the electronic component is a light emitting diode. Light emitting components are well known in the electrical art, and one of ordinary skill in the art could have added an LED to the antenna module of Mejia without departing from the scope of the invention. One of ordinary skill in the art would be motivated to add an LED to the antenna module to provide a visual cue for indicating the state of the antenna system. Such a modification would provide no change in the function of the antenna module, and the combination would have yielded predictable results to one of ordinary skill in the art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER F. HU whose telephone number is (571) 270-3831. The examiner can normally be reached on Monday-Friday 9:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Owens can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JENNIFER F HU/
Examiner, Art Unit 2821

/Douglas W Owens/
Supervisory Patent Examiner, Art Unit 2821
December 16, 2009